

WATER QUALITY ASSESSMENT REPORT

STATE ROUTE 68/CORRAL DE TIERRA ROAD INTERSECTION IMPROVEMENT PROJECT MONTEREY COUNTY, CALIFORNIA

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LIST OF ACRONYMS

AGR	Agricultural Supply
Basin Plan	CCRWQCB Board Water Quality Control Plan
BAT	Best Available Technology
BCT	Best Control Technology
BMPs	Best Management Practices
Caltrans	California Department of Transportation\
CCRWQCB	Central Coast Regional Water Quality Control Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
COLD	Cold Fresh Water Habitat
COMM	Commercial and Sport Fishing
Corps	United States Army Corps of Engineers
County	County of Monterey
CWA	Clean Water Act
FRESH	Freshwater Replenishment
ft	feet
km	kilometer
LOS	level of service
m	meters
MEP	Maximum Extent Practicable
mi	miles
MIGR	Migration of Aquatic Organisms
mg/l	milligrams per liter
MS4	Municipal Separate Storm Sewer System
MUN	Municipal and Domestic Supply
NAWQA	National Water Quality Assessment
NPDES	National Pollution Discharge Elimination System
SWIS	National Water Information System
NWP	Nationwide Permit
PR	Project Report
PS&E	Plans, Specifications, and Estimates
PSR	Project Study Report
REC-2	Noncontact Water Recreation
RWQCB	Regional Water Quality Control Board
SR-68	State Route 68
SWMP	Storm Water Management Plan (Caltrans)
SWMP	Storm Water Management Program (County)
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load

US	United States
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WARM	Warm Freshwater Habitat
WDR	Waste Discharge Requirements
WILD	Wildlife Habitat
WPCP	Water Pollution Control Program
WILD	Wildlife Habitat

EXECUTIVE SUMMARY

The proposed project consists of operational improvements of the existing State Route 68 (SR-68)/Corral de Tierra Road intersection, including widening of the SR-68/Corral de Tierra Road intersection to accommodate the construction of a second left-turn lane from westbound SR-68 to southbound Corral de Tierra Road and the construction of a second receiving lane on Corral de Tierra Road.

The California Department of Transportation, District 5 (Caltrans) is required to incorporate water quality controls into a project during the Project Study Report (PSR); Project Report (PR); and Plans, Specifications, and Estimates (PS&E) phases of project development. The Storm Water Management Plan (SWMP) provides the framework for management of storm water discharges and water quality controls. Storm water quality controls that are applied are either temporary (during construction) or permanent (after construction and part of operation of the project).

During construction, the project would disturb 1.44 acre (ac) of soil. The proposed project would qualify for an Erosivity Waiver; therefore, a Water Pollution Control Program (WPCP) would be prepared for the proposed project. The WPCP identifies the specific best management practices (BMPs) to be implemented during project construction so as not to cause or contribute to an exceedance of any applicable water quality standard contained in a statewide Water Quality Control Plan and/or the applicable Central Coast Regional Water Quality Control Board's (RWQCB) Basin Plan. Construction Site BMPs are designed to meet the technology requirement as stipulated in the Caltrans National Pollution Discharge Elimination System (NPDES) permit. If Construction Site BMPs are properly designed, implemented, and maintained as required by the Caltrans NPDES permit, then no adverse water quality impacts would occur during construction of the proposed project.

The implementation of the SR-68/Corral de Tierra Road Intersection Improvement project would not represent a substantial change from the existing condition with respect to water quality. The increase in impervious surface would be minor and would not appreciably change the amount of runoff from the proposed project. Preliminary engineering for the project indicates that the change in the velocity and volume of storm water runoff from the site with project implementation would be negligible. As part of the Caltrans Project Delivery Storm Water Management Program described in the SWMP, selected Design Pollution Prevention BMPs would be incorporated into the design of the proposed project, where feasible. These BMPs would be implemented so as to meet or exceed the requirements of the Caltrans Statewide NPDES Permit. If Design Pollution Prevention BMPs are properly designed, implemented, and maintained as required by the Caltrans NPDES permit, no adverse water quality impacts would occur during operation of the proposed project.

1.0 INTRODUCTION

This Chapter provides a description of the proposed project alternatives as well as the approach to the Water Quality Assessment in evaluating the potential impacts related to project implementation.

The SR-68/Corral de Tierra Road Intersection Improvement project (proposed project) addresses operational improvements at the SR-68/Corral de Tierra Road intersection, located in the unincorporated area of Monterey County approximately 13 miles (mi) east of the City of Monterey and approximately 9 mi west of the City of Salinas. Figure 1 shows the regional location of the project and the project vicinity. The operational improvements will widen the SR-68/Corral de Tierra Road intersection to accommodate the construction of a second left-turn lane from westbound SR-68 to southbound Corral de Tierra Road and the construction of a second receiving lane on Corral de Tierra Road.

Caltrans District 5 will be the Lead Agency for California Environmental Quality Act (CEQA) compliance. The County of Monterey (County) Public Works Department will be a Responsible Agency under CEQA. Current funding for the project is local, and it is not anticipated that federal funds will be utilized.

1.1 PURPOSE AND NEED

The existing SR-68/Corral de Tierra Road intersection exhibits an evening peak-hour level of service (LOS) D. Both Caltrans and County planning documents cite LOS C as the standard for operations on SR-68. The purpose of the project is to improve traffic operations within the intersection to LOS C upon completion of project construction.

1.2 PROJECT DESCRIPTION

The Build Alternative (as described below) and the No Build Alternative are being considered for improving the SR-68/Corral de Tierra Road intersection.

1.2.1 No Build Alternative

The No Build Alternative assumes that no new improvements would be constructed. Under the No Build Alternative, the roadway's operational conditions will remain at or above the standard of Level of Service D (refer to Traffic Operations Technical Memorandum). Projections indicated that the unimproved intersection would operate at a Level of Service of E in the a.m. peak hour and Level of Service F in the p.m. peak hour by 2024, and therefore, the No Build Alternative fails to meet the purpose and need of this project.

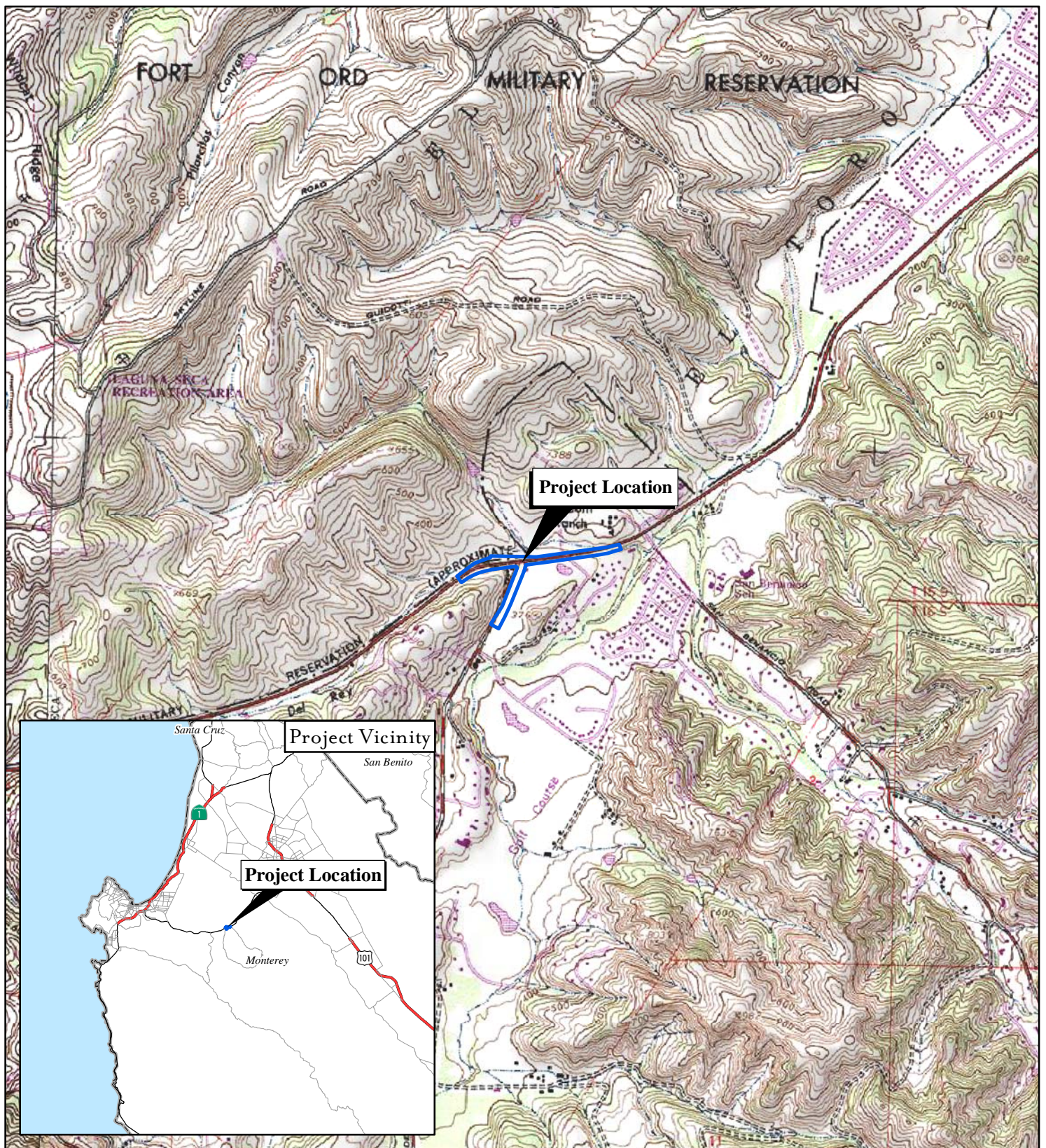
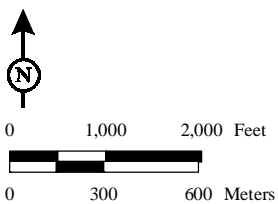


FIGURE 1



SR 68 / Corral de Tierra Road
Intersection Improvement Project
Project Location Map

SOURCE: USGS 7.5' QUAD, SPRECKELS, CA (1984); Wood Rodgers (2006)
I:\WRS0605\GIS\Fig1.mxd (4/18/2007)

1.2.2 Build Alternative

The proposed project would widen the SR-68/Corral de Tierra intersection to the north of the existing alignment to accommodate the construction of a second (additional) left turn lane from westbound SR-68 onto southbound Corral de Tierra Road. Both of the left turn lanes (in the median of SR-68) would have sufficient length to accommodate deceleration from 53 miles per hour. An additional receiving lane would also be constructed on southbound Corral de Tierra Road. The paved shoulders of Corral de Tierra Road within the project area would be widened to 8 feet to better accommodate pedestrians and facilitate the future addition of Class II bicycle lanes to Corral de Tierra Road.

About 520 feet of Steel Crib retaining wall (or equivalent) would be constructed west of Corral de Tierra Road along the north embankment of SR-68. The retaining wall would lie below the existing road grade and therefore would not be visible from SR-68. The retaining wall would minimize the footprint of the embankment needed to accommodate the widened road section.

A left turn lane would also be constructed from westbound SR-68 into the Corral de Tierra County Club driveway. The Corral de Tierra County Club driveway is located east of Corral de Tierra Road on the south side of SR-68.

No provisions for left turns to or from the residential driveway on the north side of SR-68 would be made. As part of the proposed project, a painted median island would be created in front of the residential driveway restricting drivers to right-in, right-out access. Drivers needing to make left-in, left-out movements would need to make a U-turn at the traffic signal at either San Benancio Road or at Corral de Tierra Road. U-turn movements at these signalized intersections are both legal and safe.

All of the work would be constructed within existing State and County rights-of-way, except for a small area of new State right-of-way that would be acquired on the north side of SR-68 just east of the intersection to accommodate relocation of a bus stop, widening and grading. Also, a temporary construction easements would be acquired along the east side of Corral de Tierra Road to accommodate grading near the edge of the County right-of-way (refer to Figure 1-3: Build Alternative Design Plan). Temporary staging areas for construction equipment and materials would be located in those areas of the existing State and County rights-of-way that are not designated as environmentally sensitive areas. Construction is expected to be completed in a single season.

1.3 APPROACH TO WATER QUALITY ASSESSMENT

The purpose of this Water Quality Assessment Report is to determine whether improvement to the SR-68/Corral de Tierra Road intersection will have an adverse impact on water quality based on the proposed build alternative. The determination of impacts is based on the anticipated change in pollutant sources due to changes in land use and changes in the impervious area percentage between the existing condition and the postproject condition. The analysis includes consideration of BMPs to be implemented as part of the project. This assessment also discusses existing water quality regulations and Caltrans methods of complying with those regulations.

2.0 REGULATORY SETTING

Discharges into waters of the United States (U.S.) are subject to the regulatory authority of the United States Army Corps of Engineers (Corps) under Section 404 of the federal Clean Water Act (CWA); the State Water Resources Control Board (SWRCB) and the CCRWQCB under Sections 401, 402, and 303(d) of the CWA and the California Porter-Cologne Water Quality Act; and the California Department of Fish and Wildlife (CDFW) under Section 1602 of the California Fish and Game Code.

2.1 FEDERAL REQUIREMENTS OF THE CLEAN WATER ACT

2.1.1 Section 404

The Corps regulates discharges or fills into Waters of the U.S. under Section 404 of the CWA via the Nationwide Permit (NWP) or Individual Permit program. There are several categories of NWPs, and these can be used for projects that fall under specific categories. A Preconstruction Notification (PCN) to the Corps' district engineer is required for most activities that result in the loss of greater than 0.1 ac of Waters of the U.S.. The Corps reviews the PCN on a case-by-case basis to determine whether the adverse effects (on the aquatic environment) of proposed work are minimal. The Corps will also determine whether a particular drainage is considered Waters of the U.S. and whether it is subject to regulation under Section 404.

2.1.2 Section 402

Direct discharges of pollutants into Waters of the U.S. are not allowed, except in accordance with the NPDES program established in Section 402 of the CWA. The major purpose of the NPDES program is to protect human health and the environment. Pursuant to the NPDES program, permits that apply to storm water discharges from MS4s, specific industrial activities, and construction activities (1 ac or more) have been issued. NPDES permits establish enforceable effluent limitations on discharges, require monitoring of discharges, designate reporting requirements, and require the permittee to perform BMPs. Industrial (point source) storm water permits are required to meet effluent limitations; municipal permits are governed by the maximum extent practicable (MEP) or Best Available Technology (BAT)/Best Control Technology (BCT) application of BMPs.

2.1.3 Section 401

Section 401 of the CWA specifies that any applicant for a federal license or permit to conduct any activity, including but not limited to the construction or operation of facilities that may result in any discharge into navigable waters, shall provide the federal licensing or permitting agency with a certification from the State in which the discharge originates or will originate from the State agency with jurisdiction over those waters (CCRWQCB) that the project will comply with water quality standards, protect beneficial uses, meet water quality objectives, and comply with the State antidegradation policy.

2.1.4 Section 303

Section 303(d) of the CWA requires that the State adopt water quality objectives for surface waters. The CCRWQCB Basin Plan and Resolution No. R8-2004-0001 contain water quality objectives that are considered necessary to protect the specific beneficial uses the Basin Plan identifies. In addition, because California had not established a complete list of acceptable water quality criteria for toxic pollutants, United States Environmental Protection Agency (USEPA) Region IX established numeric water quality criteria for toxic constituents in the form of the California Toxics Rule. Section 303(d) also specifically requires the State to develop a list of impaired water bodies and subsequent numeric Total Maximum Daily Loads (TMDL)¹ for whichever constituents impair a particular water body. These constituents include inorganic and organic chemical compounds, metals, sediment, and biological agents.

2.2 STATE REQUIREMENTS

2.2.1 Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code)

The Porter-Cologne Act establishes a regulatory program to protect water quality and beneficial uses of State waters. For all areas within the regions, it empowers the Regional Boards to formulate and adopt a Basin Plan that designates beneficial uses and establishes such water quality objectives that in their judgment will ensure reasonable protection of beneficial uses. Each Regional Board establishes water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance. The Water Code provides flexibility for some change in water quality, provided that beneficial uses are not adversely affected.

2.2.2 California Fish and Game Code Section 1602

The CDFW, through provisions of the California Fish and Game Code (Section 1602), is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be adversely affected. Streams and rivers are defined by the presence of a channel bed and banks and at least an intermittent flow of water. CDFW typically extends the limits of its jurisdiction laterally beyond the channel banks for streams that support riparian vegetation. In these situations, the outer edge of the riparian vegetation is generally used as the lateral extent of the stream and CDFW jurisdiction.

The California Fish and Game Code Section 1602 requires any person, State or local governmental agency, or public utility to notify the CDFW before beginning any activity that will result in one or more of the following: (1) substantial obstruction or diversion of the natural flow of a river, stream, or lake, (2) substantial change in or use of any material from the bed, channel, or bank of a river, stream, or lake, or (3) deposit or disposal of debris, waste, or other material containing crumbled, flaked, or

¹ The TMDL is the total amount of a constituent that can be discharged while meeting water quality objectives and protecting beneficial uses. It is the sum of the individual load allocations for point source inputs (e.g., an industrial plant), load allocations for nonpoint source inputs (e.g., runoff from urban areas), and natural background, with a margin of safety.

ground pavement where it can pass into a river, stream, or lake. The Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the State.¹

2.2.3 State Requirements under Section 402 of the CWA

Construction General Permit. On September 2, 2009, the State Water Resources Control Board adopted the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Final Order No. 2012-011-DWQ, NPDES No. CAS000003), as amended by Order No. 2010-0014-DWQ. In accordance with NPDES regulations, the State of California requires that any construction activity disturbing 1 ac or more of soil comply with the Construction General Permit. To obtain authorization for proposed storm water discharges pursuant to this permit, the landowner (discharger) is required to submit a Notice of Intent and Permit Registration Documents, including a risk assessment, site map, SWPPP, annual fee, and signed certification statement to the State Water Resources Control Board. Dischargers are required to implement BMPs meeting the technological standards of Best Available Technology/Best Control Technology to reduce or eliminate storm water pollution. BMPs include programs, technologies, processes, practices, and devices that control, prevent, or remove or reduce pollution. Permittees must also maintain BMPs and conduct inspection and sampling programs as required by the permit. Dischargers are also required to comply with monitoring and reporting requirements to ensure that discharges comply with the numeric action levels and numeric effluent limitations specified in the permit.

Projects that disturbed between 1 and 5 ac can qualify for an Erosivity Waiver by certifying to the State Water Resources Control Board that the construction activity would occur only when the Rainfall Erosivity Factor is less than 5 ("R" in the Revised Universal Soil Loss Equation). The Rainfall Erosivity Factor was calculated as 1.3 for the proposed project using construction dates of May 1, 2014 and October 1, 2014. Because the Rainfall Erosivity factor is less than 5 and the disturbed soil area would be between 1 and 5 ac, the proposed project qualifies for a Rainfall Erosivity Waiver.

Caltrans Statewide NPDES Permit. On September 19, 2012, the SWRCB issued a statewide general NPDES Storm Water Permit (Order No. 2012-0011-DWQ) to Caltrans, which regulates storm water discharges from Caltrans properties, facilities, and (maintenance) activities and requires that the Caltrans construction program comply with the requirements of the State General Construction Activity Storm Water Permit (Order No. 2009-0009-DWQ). The Caltrans Statewide Storm Water Management Plan (SWMP) describes the methods for complying with the Caltrans NPDES Permit. This permit requires preparation of a Water Pollution Control Program (WPCP) for projects that disturb between 1 and 5 ac of soil and qualify for an Erosivity Waiver. Operation of the project is subject to the requirements of the Caltrans NPDES permit for the portion of the project that is within State right-of-way.

MS4 Permit. The County of Monterey is subject to the requirements of the *State Water Resources Control Board (SWRCB) Water Quality Order No. 2003-0005-DWQ, National Pollutant Discharge*

¹ California Department of Fish and Game Web site: www.dfg.ca.gov/1600/qa.html.

*Elimination System (NPDES) General Permit No. CAS000004, Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4 Permit).*¹ The region within the County subject to these requirements must at least include all urbanized areas. The General Permit requires permittees to develop and implement an SWMP that describes BMPs, measurable goals, and timetables for implementation in the following six program areas:

- Public Education
- Public Participation
- Illicit Discharge Detection and Elimination
- Construction Site Storm Water Runoff Control
- Postconstruction Storm Water Management
- Pollution Prevention/Good Housekeeping for Municipal Operations

In particular, the MS4 Permit requires that the County develop and implement strategies that include a combination of appropriate structural and/or nonstructural BMPs to be incorporated into new development and redevelopment projects. Source Control BMPs are pollution prevention practices that are designed to reduce pollutants in runoff from a project site (e.g., street sweeping, drainage system maintenance). Treatment BMPs are structural devices that physically remove pollutants in runoff (e.g., infiltration basins, vegetated swales). The Monterey Regional Storm Water Management Program was adopted on November 15, 2006, which requires the County to develop, implement, and enforce a program to reduce pollutants in storm water runoff from construction activities, development projects, and redevelopment projects that disturb more than 1 ac of soil.

2.2.4 Regional and Local Requirements

The County of Monterey requires an Erosion Control Plan that identifies the proposed methods for controlling runoff, erosion, and sediment movement for review and approval by the appropriate director for projects within its jurisdiction (Municipal Code, Chapter 16.12).

2.3 BENEFICIAL USES

Beneficial uses of water are defined in the CCRWQCB's Basin Plan as those necessary for the survival or well-being of humans, plants, and wildlife. Examples of beneficial uses include drinking water supplies, swimming, industrial and agricultural water supply, and the support of freshwater and marine habitats and their organisms.

¹ April 30, 2003.

2.3.1 Surface Water Beneficial Uses

There are no designated beneficial uses for El Toro Creek. Surface waterbodies that do not have designated beneficial uses are automatically assigned the following designations according to the Basin Plan:

- Municipal and domestic water supply
- Protection of both recreation and aquatic life

Beneficial uses for the Salinas River, downstream of Spreckels (downstream of the project site), are listed below.

- Agricultural Supply (AGR): Includes uses of water for farming, horticulture, or ranching.
- Cold Fresh Water Habitat (COLD): Includes uses of water that support cold water ecosystems.
- Migration of Aquatic Organisms (MIGR): Includes uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms.
- Freshwater Replenishment (FRESH): Includes uses of water for natural or artificial maintenance of surface water quantity or quality, such as reservoir supply.
- Commercial and Sport Fishing (COMM): Includes uses of water for commercial or recreation collection of fish, shellfish, or other aquatic organisms.
- Municipal and Domestic Supply (MUN): Includes uses of water for community, military, municipal, or individual water supply systems.
- Noncontact Water Recreation (REC-2): Includes the uses of water for recreational activities involving proximity to water but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.
- Warm Freshwater Habitat (WARM): Includes uses of water that support warm water ecosystems. These uses include, but are not limited to, preservation or enhancement of aquatic habitats, vegetation, and fish and wildlife, including invertebrates.
- Wildlife Habitat (WILD): Includes uses of water that support terrestrial ecosystems, including but not limited to preservation and enhancement of terrestrial habitats, vegetation, wildlife (i.e., mammals, birds, reptiles, amphibians, invertebrates), and wildlife water and food sources.

2.3.2 Groundwater Beneficial Uses

According to the Basin Plan, groundwater in the Corral de Tierra Area subbasin of the Salinas River Groundwater Basin is suitable for agricultural, municipal, and domestic water supply and industrial use.

2.4 WATER QUALITY OBJECTIVES

As required by the Porter-Cologne Act, the CCRWQCB has developed water quality objectives for waters within its jurisdiction to protect the beneficial uses of those waters and has published them in the Basin Plan. The Basin Plan also establishes implementation programs to achieve these water quality objectives and requires monitoring to evaluate the effectiveness of these programs. Water quality objectives must comply with the State antidegradation policy (State Board Resolution No. 68-16), which is designed to maintain high-quality waters while allowing some flexibility if beneficial uses are not unreasonably affected.

2.4.1 Surface Water Quality Objectives

There are no specific water quality objectives listed for El Toro Creek in the Basin Plan. Surface water quality objectives for all inland waters are listed in Table A.

2.4.2 Groundwater Quality Objectives

General groundwater quality objectives for the Central Coast Region, including the Corral de Tierra Area subbasin, are provided in Table B.

As illustrated in Appendix A-32 of the Basin Plan, the aquifers in the Salinas Groundwater Basin that are in the vicinity of the project site are the 180-foot aquifer and the 400-foot aquifer. The median objectives for these aquifers are listed in Table C.

2.5 LIST OF IMPAIRED WATERS

The State Water Resources Control Board approved the 2010 Integrated Report (CWA Section 303(d) List/305(b) Report on August 4, 2010. On November 12, 2010, the EPA approved the 2010 California 303(d) List of Water Quality Limited Segments. The 2010 303(d) impaired waters list shows the lower Salinas River as impaired for chlordane, chloride, chlorpyrifos, dichlorodiphenyldichloroethane (DDD), diazinon, dieldrin, electrical conductivity, enterococcus, *Escherichia coli* (*E. coli*), fecal coliform, nitrate, polychlorinated biphenyls (PCBs), pesticides, sodium, total dissolved solids (TDS), toxaphene, turbidity, unknown toxicity, and pH. Sources of the impairments include agriculture, natural sources, urban runoff, unpermitted discharges, unknown sources, construction/land development, and unspecified point sources.¹ There are existing TMDLS for fecal coliform and pesticides (chloropyrifos and diazinon). A TMDL is currently being developed for the Salinas River nutrients pesticides.

¹ SWRCB. 2010. *Clean Water Act Section 303(d) List of Water Quality Limited Segments*.

Table A: Surface Water Quality Objectives for Inland Waters

Constituent	Concentration
Color	Shall not cause nuisance or adversely affect beneficial uses. Coloration attributable to materials of waste origin shall not be greater than 15 units or 10 percent above natural background color, whichever is greater.
Tastes and Odors	Shall not cause nuisance or adversely affect beneficial uses or cause undesirable tastes or odors to edible organisms.
Floating Material	Shall not cause nuisance or adversely affect beneficial uses.
Suspended Material	Shall not cause nuisance or adversely affect beneficial uses.
Settleable Material	Shall not cause nuisance or adversely affect beneficial uses.
Oil and Grease	Shall not cause nuisance or adversely affect beneficial uses or visible film on water surface.
Biostimulatory Substances	Shall not promote aquatic growths to the extent that causes nuisance or adversely affect beneficial uses.
Sediment	Shall not cause nuisance or adversely affect beneficial uses.
Turbidity	<ol style="list-style-type: none"> 1. Where natural turbidity is between 0 and 50 Jackson Turbidity Units (JTU), increases shall not exceed 20 percent. 2. Where natural turbidity is between 50 and 100 JTU, increases shall not exceed 10 percent. 3. Where natural turbidity is greater than 100 JTU, increases shall not exceed 10 percent.
Dissolved Oxygen	Shall not be less than 5.0 mg/l (milligrams per liter). Median values should not fall below 85 percent saturation.
Toxicity	Shall be free of toxic substances in concentrations that are toxic to or that produce detrimental physiological responses in life forms. The discharges of wastes shall not cause concentrations of unionized ammonia (NH ₃) to exceed 0.025 mg/L (as N).
Pesticides	Shall not reach concentrations that adversely affect beneficial uses. Shall not increase concentrations in bottom sediments or aquatic life. For waters where existing concentrations are presently nondetectable or where beneficial uses would be impaired by concentrations in excess of nondetectable levels, total identifiable chlorinated hydrocarbon pesticides shall not be present at concentrations detectable within the accuracy of analytical methods.
Bacteria (fecal coliform)	Five samples in a 30-day period shall not exceed a log mean of 200/100 ml. Ten percent of samples in a 30-day period shall not exceed 400/100 ml.
pH	Shall not be depressed below 7.0 nor raised above 8.5.
Radioactivity	Shall not be present in concentrations that are deleterious to life forms.
Not-to-Be-Exceeded Levels	
Methylene Blue Activated Substances	0.2 mg/L
Phenols	0.1 mg/L
PCBs	0.3 µg/L (micrograms per liter)
Phthalate Esters	0.002 µg/L

Source: *Water Quality Control Plan, Central Coast Region.*

Table B: General Groundwater Objectives for the Central Coast Region

Constituent	Concentration
Tastes and Odors	Shall not contain taste- or odor-producing substances in concentrations that adversely affect beneficial uses.
Radioactivity	Shall not be in excess of limits specified in 22 CCR, Chap. 15, Section 64443, Table 4.

Source: *Water Quality Control Plan, Central Coast Region.*

Table C: Median Groundwater Objectives for the Salinas River Groundwater Basin (mg/l)

	Total Dissolved Solids	Chlorine	Sulfate	Boron	Sodium	Nitrogen
180-foot aquifer	1,500	250	600	0.5	250	1
400-foot aquifer	400	50	100	0.2	50	1

Source: *Water Quality Control Plan, Central Coast Region.*

3.0 AFFECTED ENVIRONMENT

3.1 SURFACE WATER

The project lies within the Salinas Hydrologic Unit in the Monterey Peninsula Hydrologic Sub-Area (309.50). The watershed is approximately 75,113 ac in size and ultimately drains to the Pacific Ocean at Monterey Bay.

The nearest receiving water is an ephemeral drainage located to the north of the project site which is tributary to El Toro Creek (Figure 2)¹. El Toro Creek flows into the Salinas River (approximately 5 mi downstream of the project site) and then to Monterey Bay, located 15 mi west of the project area. El Toro Creek is ephemeral (does not flow year-round). The Salinas River flows year-round; however, flow is controlled by monitored releases of water from the San Antonio and Nacimiento Reservoirs.²

3.2 GROUNDWATER

The project site is located in the Corral de Tierra Area subbasin of the Salinas River Groundwater Basin.³ Groundwater flow in the region is from southwest to northeast, consistent with the topographic gradient.⁴ A well approximately 0.25 mi southeast of the project site has been measured monthly since 1960. Depth to groundwater ranges between 16.8 and 87.0 ft.⁵ Only minor earthwork will be required during construction; therefore, no groundwater dewatering activities are anticipated as part of the proposed project.⁶

3.3 TOPOGRAPHY AND SOILS

The eastern, southern, and northern portions of the proposed project area are on level floodplain in the El Toro Creek valley. The western portion is on a gently sloping hillside in Canyon Del Rey. Geologically, the eastern, southern, and intersection portions consist of Quaternary alluvium (1.8 million years ago to present). The western portion consists of Mesozoic marine rocks (245 to 65 million years ago).⁷ Soils in the eastern, southern, and intersection portions consist of Gorgonio sandy

¹ United States Geological Survey (USGS). 2007. National Hydrography Dataset.

² Monterey County. 1991. Toro Area Plan; A Part of the Monterey County General Plan.

³ Regional Water Quality Control Board, Central Coast. 1994. Water Quality Control Plan, Central Coast Region. September 8.

⁴ California Department of Water Resources. Bulletin 118. Updated January 20, 2006.

⁵ Personal communication, Peter Kwiek, Monterey County Water Resources Agency. March 19, 2007.

⁶ Wood Rodgers. 2006. Project Study Report on Route 68 at Corral de Tierra Road Intersection Operational Improvement.

⁷ Jennings and Strand. 1958. *Geologic Map of California: Santa Cruz Sheet*. California Division of Mines and Geology, Sacramento, California.

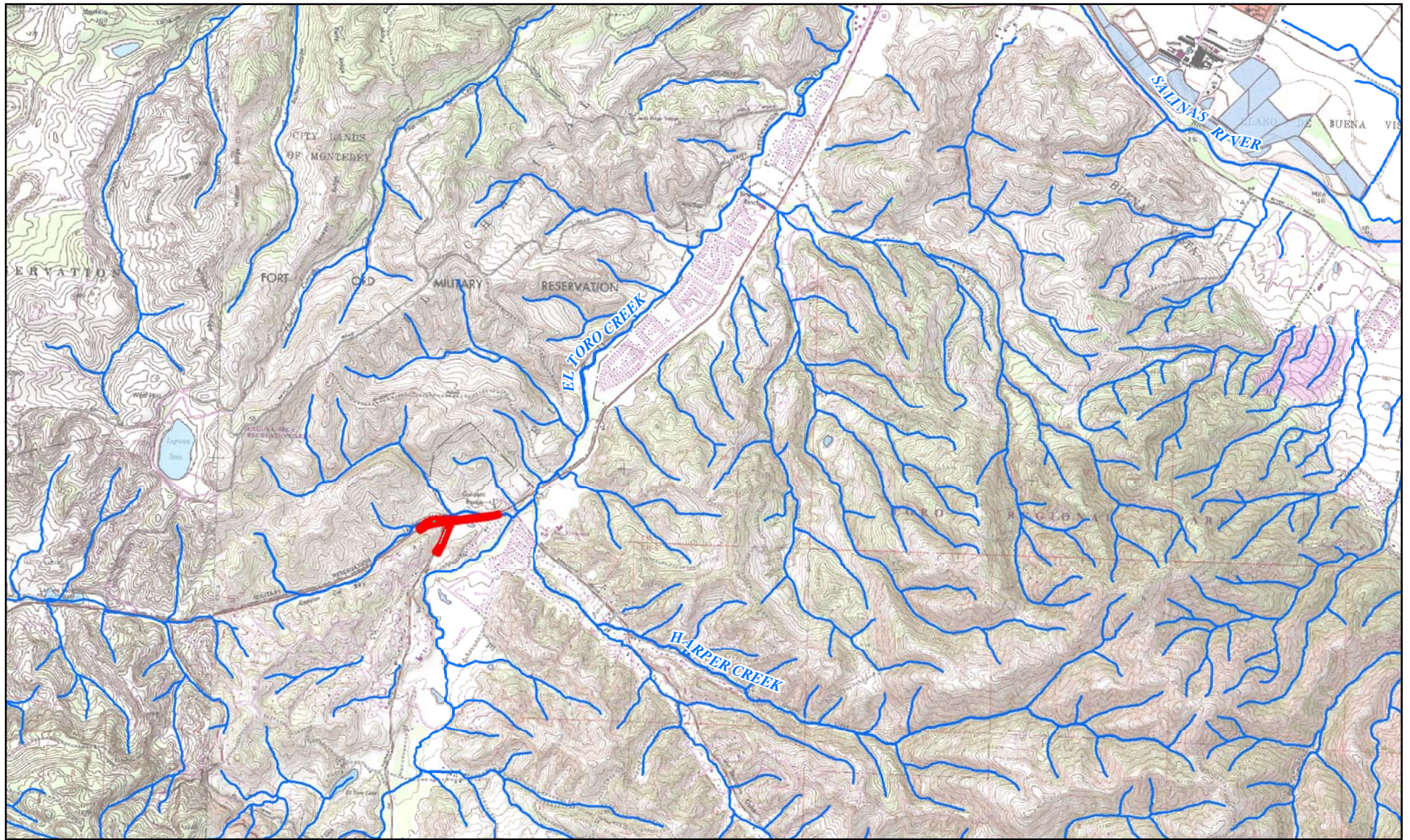
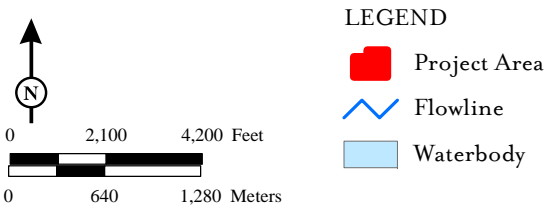


FIGURE 2



SOURCE: Boundary - Wood Rodgers (2006), National Hydrography Dataset (2007)

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SR 68 / Corral de Tierra Road
Intersection Improvement Project
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loam, which is an extremely well-drained, valley floor alluvium derived from granites and schistose rocks. Soils in the western portion consist of Santa Ynez fine, sandy loam, which is a hilly, moderately well-drained alluvium derived from granites and sandstones.¹ Gorgonio sandy loam has slow runoff potential and a slight erosion hazard. Runoff from Santa Ynez fine sandy loam is rapid, and erosion hazard is high.

3.4 CLIMATE

The climate in Monterey County and within the project area is characterized by warm dry summers and cool moist winters. The average temperature is approximately 59 degrees Fahrenheit. Average rainfall is approximately 14.9 inches per year. Approximately 90 percent of this rainfall occurs between November and April.

3.5 LAND USE

The surrounding land is characterized by low-density residential, low-density commercial, and rural uses.

3.6 EXISTING WATER QUALITY

3.6.1 Surface Water Quality

The United States Geological Survey (USGS) monitors water resources throughout the U.S. Most of the data from individual sites distributed in the National Water Information System (NWIS) are related to stream flow; however, some water quality data are available for a few select sites. In addition, USGS launched the National Water Quality Assessment (NAWQA) Program in 1991 and has been collecting water quality information on watersheds throughout the country. Constituents tested reflect limiting parameters for aquatic life but do not necessarily include typical urban runoff pollutants.

USGS water quality data are available for the Salinas River Station near Spreckels (Latitude 36°37'52", Longitude 121°40'17") from 1976 to 1986; data from a few dates are provided in Table A below. As seen in the table, not all constituents were tested for during each sampling period, and no explanation was provided. Runoff from the project site enters El Toro Creek, which discharges into the Salinas River near Speckles. Data for the Salina River near Spreckels is presented in Table D to illustrate water quality near the project site. No recent data for this area of the Salinas River is available.

¹ Cook et al. 1978. *Soil Survey of Monterey County, California*. United States Department of Agriculture, Soil Conservation Service.

Table D: USGS Water Quality Data for the Salinas River Station near Spreckels¹

Constituent	Concentration			
	1/15/76	5/4/76	9/1/77	5/7/86
Temperature (°C)	14.0	17.0	22.5	16.5
Turbidity (JCU)	10	15	No data	No data
pH	7.9	7.1	7.2	No data
Dissolved Oxygen (mg/l)	No data	No data	7.8	No data
Total Dissolved Solids (mg/l)	746	534	663	No data
Suspended Sediment (mg/l)	No data	No data	11	No data
Total Nitrogen (mg/l)	15	22	No data	No data
Nitrogen as Nitrate (mg/l)	68	97.0	No data	No data
Total Phosphorus (mg/l)	4.5	11	15.0	No data
Total Hardness (mg/l as CaCO ₃)	400	210	220	No data
Dissolved Sodium (mg/l)	110	99	110	No data
Dissolved Chloride (mg/l)	140	120	170	No data
Dissolved Sulfate (mg/l)	55	110	62.0	No data
Dissolved Boron (mg/l)	No data	No data	320	No data
Total Arsenic (µg/l)	6	No data	No data	No data
Total Cadmium (µg/l)	< =20	No data	< =20	No data
Total Recoverable Chromium (µg/l)	ND ²	No data	40	No data
Total Recoverable Copper (µg/l)	30	No data	70	No data
Total Recoverable Lead (µg/l)	< =200	No data	< =200	No data
Total Recoverable Mercury (µg/l)	< = 0.5	No data	No data	No data
Total Recoverable Zinc (µg/l)	No data	No data	120	No data
Fecal Coliform (colonies/100 ml)	Estimated 10	120	No data	No data
Total Aldrin (µg/l)	No data	ND	No data	No data
Total Lindane (µg/l)	No data	ND	No data	No data
Total Chlordane (µg/l)	No data	0.2	No data	No data
P'-P-DDT (µg/l)	No data	0.100	No data	No data
Total Dieldrin (µg/l)	No data	ND	No data	No data
Endrin (µg/l)	No data	ND	No data	No data
Total Toxaphene (µg/l)	No data	ND	No data	No data
Total Heptachlor (µg/l)	No data	ND	No data	No data
Total Heptachlor Epoxide (µg/l)	No data	ND	No data	No data
Total Methoxychlor (µg/l)	No data	ND	No data	No data
Total Malathion (µg/l)	No data	ND	0.00	No data
Total Parathion (µg/l)	No data	ND	0.00	No data
Total Diazinon (µg/l)	No data	ND	0.08	No data
Total Methyl Parathion (µg/l)	No data	ND	0.00	No data
Atrazine (µg/l)	No data	ND	No data	No data
Total 2, 4-D (µg/l)	No data	ND	0.16	No data
Total 2,4,5-T (µg/l)	No data	ND	No data	No data
Silvex (µg/l)	No data	ND	0.03	No data
Carbophenothion (µg/l)	No data	ND	No data	No data
Total Methyltrithion (µg/l)	No data	ND	No data	No data

¹ www.usgs.gov.² Not detected.

3.6.2 Groundwater Quality

Groundwater in the basin is very hard and is characterized by bicarbonate-chloride with calcium and sodium as the predominate cations.¹ Total dissolved solids (TDS) range from 355 to 679 milligrams per liter (mg/L).²

3.6.3 Regional Water Quality

The water quality of the Salinas River Watershed has been severely impacted by nonpoint source pollution. Agricultural runoff has contributed high levels of nutrients and pesticides to surface water resources. The Salinas Groundwater Basin has been contaminated with high levels of nitrate and seawater intrusion.³ Also associated with the degradation of the Salinas River Watershed are urbanization; flood control activities; hydromodification of creeks; mining of sand, gravel, mineral, and oil reserves; and military activities.² The Central Coast Regional Water Quality Control Board (CCRWQCB) has designated this watershed as one of its highest priorities for cleanup.

¹ A positively charged ion.

² California Department of Water Resources. Bulletin 118. Updated January 20, 2006.

³ Regional Water Quality Control Board, Central Coast, Watershed Management Initiative, January 2002.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter discusses the potential environmental effects with implementation of the project, as well as the procedures and practices that will be applied to reduce those effects.

4.2 CALTRANS STANDARD PROCEDURES AND PRACTICES

While carrying out its mission to plan, develop, maintain, and manage interregional transportation in California, it is Caltrans policy to protect and enhance the environment and quality of life in accordance with the environmental, economic, and social goals of the State. With its statewide SWMP, implemented via Caltrans Stormwater Management Program, the agency is helping to prevent the adverse effects of storm water runoff from Caltrans roadways and facilities.

4.2.1 Project Planning and Design

Caltrans staff is required to evaluate and incorporate water quality controls into a project, if feasible, during the PSR, PR, and PS&E phases of project development. Caltrans SWMP provides the framework for management of storm water discharges and water quality controls. Storm water quality controls that are applied are either temporary (during construction) or permanent (after construction and part of operation of the project).

The BMPs that must be considered during the planning and design phase include Design Pollution Prevention, Treatment, and Construction Site BMPs. Design Pollution Prevention and Construction Site BMPs must be considered for every project. Treatment BMPs must be considered for all projects that are not considered exempt from consideration of treatment BMPs.¹

Table E shows examples of the BMP categories and the responsible Caltrans divisions.

Design Pollution Prevention BMPs, permanent BMPs to reduce erosion, manage storm water discharges, etc., are listed in Table F. These BMPs are required to be incorporated, as appropriate, into the design of new facilities and reconstruction or expansion of existing facilities.

Pollutants of concern for highway projects and applicable Caltrans-approved treatment BMPs, permanent BMPs that physically remove pollutants, are provided in Table G.

¹ *Storm Water Quality Handbooks, Project Planning and Design Guide*, July 2010.

Table E: BMP Categories and Responsible Division

BMP	Description	Responsible Division for BMP Implementation
Design Pollution Prevention BMPs	Permanent soil stabilization and concentrated flow controls and slope protection systems, etc.	Division of Design
Treatment BMPs	Permanent treatment devices and facilities	Divisions of Design, Construction and Maintenance
Construction Site BMPs	Temporary soil stabilization and sediment control, non-stormwater management, and waste management	Divisions of Design and Construction
Maintenance BMPs	Litter pickup, toxics control, street sweeping, etc.	Division of Maintenance

Source: California Department of Transportation, *Storm Water Quality Handbooks, Project Planning and Design Guide*, Revised July 2010.

Table F: Design Pollution Prevention BMPs

Consideration of Downstream Effects Related to Potentially Increased Flow:
<ul style="list-style-type: none"> • Peak Flow Attenuation Devices • Reduction of Paved Surface (i.e., increase pervious area) • Soil Modification • Energy Dissipation Devices
Preservation of Existing Vegetation ¹
Concentrated Flow Conveyance Systems:
<ul style="list-style-type: none"> • Ditches, Berms, Dikes and Swales • Overside Drains, Downdrains, Paved Spillways • Channel Linings • Flared Culvert End Sections • Outlet Protection/Velocity Dissipation Devices
Slope/Surface Protection Systems:
<ul style="list-style-type: none"> • Vegetated Surfaces • Benching/Terracing, Slope Rounding, Reduce Gradients • Hard Surfaces

Source: California Department of Transportation, *Storm Water Quality Handbooks, Project Planning and Design Guide*, Revised July 2010.

¹ For all Caltrans projects, Caltrans will maximize the vegetation-covered soil areas of a project.

Table G: Pollutants of Concern and Applicable Treatment BMPs

	Biofiltration Systems	Infiltration Basin	Detention Devices	Dry Weather Flow Diversions ¹	Gross Solids Removal Devices	Multi-Chambered Treatment Train	Media Filters	Wet Basins	Traction Sand Traps
Total suspended solids	√	√	√	√		√	√	√	√
Total dissolved solids				√					
Nutrients	√ ⁴	√	√ ⁴	√			√ ²	√ ³	
Pesticides		√		√					
Particulate metals	√	√	√	√		√	√	√	
Dissolved metals	√	√		√		√	√		
Pathogens		√		√				√	
Litter		√	√	√	√	√	√	√	
Biochemical oxygen demand		√		√				√	
Turbidity	√	√	√	√		√	√	√	√

Source: California Department of Transportation, *Storm Water Quality Handbooks, Project Planning and Design Guide*, Revised July 2010.

¹ Dry Weather Flow Diversions address non-stormwater flows only.

² Phosphorus and Nitrogen for the Austin Sand Filter; Phosphorus only for the Delaware Sand Filter.

³ Reductions observed for dry weather flow only.

⁴ Soil needs to have adequate infiltration capacity.

Caltrans lists several Construction Site BMPs, which are temporary pollution prevention activities to be employed during the construction phase. These BMPs are selected for their applicability to a specific project and are incorporated into the WPCP. All of the Caltrans-approved Construction Site BMPs are provided in Appendix C of the *Storm Water Quality Handbooks, Project Planning and Design Guide*.

4.2.2 Project Construction

The Caltrans *Construction Site Best Management Practices (BMPs) Manual* (2012) and the *Stormwater Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual* (2011) provide the working details for critical, temporary Construction Site BMPs. These handbooks provide guidelines for the proper design, implementation, and maintenance of the BMPs. A WPCP will be prepared for the project, consistent with Caltrans requirements. The WPCP shall identify the specific BMPs to be implemented during project construction so as not to cause or contribute to an exceedance of any applicable water quality standard contained in a statewide Water Quality Control Plan and/or the applicable CCRWQCB's Basin Plan. These BMPs shall meet the BAT/BCT requirement as stipulated in the Caltrans NPDES permit.

4.2.3 Project Operation and Maintenance

The Caltrans NPDES permit also governs operation and maintenance of projects once they are completed. The discharges from a facility shall not create a condition of nuisance or adversely affect the beneficial uses of waters of the State. Under Caltrans standards and procedures, the proposed project is exempt from implementing postconstruction treatment BMPs because the project is not a new facility or a major reconstruction, there will be no change in line/grade or hydraulic capacity, and the disturbed soil area is less than 3 ac.

4.3 IMPACT ASSESSMENT METHODOLOGY

The purpose of this Water Quality Assessment Report is to analyze the difference between the existing condition and the project build condition with respect to water quality impacts. The assessment takes the following into consideration:

- Pollutant sources (change in land use)
- Impervious area and relation to amount of runoff (increase or decrease)
- Application of BMPs (number of BMPs, new technologies, effectiveness)
- Discharges into impaired waters (listed pursuant to Section 303[d] of the CWA)

4.4 POTENTIAL IMPACTS TO WATER QUALITY

4.4.1 Short-term Impacts During Construction

Pollutants of concern during construction include sediments, trash, petroleum products, and chemicals.¹ Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality.

4.4.2 No Build Alternative

Under the No Build Alternative, no improvements to the SR-68/Corral de Tierra Road intersection other than routine roadway maintenance would be made. Therefore, the No Build Alternative would result in no short-term impacts from construction-related activities.

4.4.3 Build Alternative

Construction activities under the Build Alternative would disturb 1.44 ac of soil. The proposed project would implement Construction Site BMPs using BAT/BCT, consistent with the requirement of the statewide Caltrans NPDES permit. These construction site BMPs would include soil stabilization, sediment control, housekeeping and waste management practices, and nonstorm water management BMPs. If Construction Site BMPs are properly designed, implemented, and maintained as required by the Caltrans NPDES permit, then no adverse water quality impacts would occur during construction of the proposed project.

4.4.4 Long-Term Impacts During Operation

Pollutants of concern during operation of a transportation facility include sediments, trash, petroleum products, metals, and chemicals.² An increase in impervious area increases the volume of runoff during a storm, which can more effectively transport pollutants to receiving waters and may lead to downstream erosion.

4.4.5 Alternative 1 (No Build)

Under the No Build Alternative, there would not be an increase in impervious area at the SR-68/Corral de Tierra Road. Therefore, the No Build Alternative would not result in an increase in long-term pollutant loading or erosion potential.

4.4.6 Build Alternative

The Build Alternative would increase the area of impervious surface by 0.48 ac, an increase of less than 10.5 percent in the project area. The increase in impervious surface would slightly increase storm water discharges from the project site. However, the increase in impervious surface is not anticipated to substantially alter peak flow volumes or velocities of storm water discharges from the site. Because

¹ California Department of Transportation. 2003. *Statewide Storm Water Management Plan*. May.

² Ibid.

any increase in storm water runoff would be minor, the increase in pollutant loading from the project site will also be minor.

Design Pollution Prevention BMPs such as preservation of existing vegetation, installation of erosion control, energy dissipation, and flow conveyance devices would be incorporated into the project to address potential downstream impacts related to erosion.¹ If Design Pollution Prevention BMPs are properly designed, implemented, and maintained as required by the Caltrans NPDES permit, no adverse water quality impacts would occur during operation of the proposed project.

¹ Wood Rodgers. 2012. Draft Project Report on Route 68 at Corral de Tierra Road Intersection Operational Improvement.

5.0 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

As part of the Caltrans Project Delivery Storm Water Management Program described in the SWMP, selected Construction Site and Design Pollution Prevention BMPs will be incorporated into the final design of the reconstruction of the SR-68/Corral de Tierra Road intersection. Caltrans SWMP shall be implemented in accordance with the statewide NPDES permit. These standard requirements to minimize short-term and long-term water quality impacts are listed below.

- WQ-1** Monterey County and Caltrans will assure that the Contractor develops and implements a Water Pollution Control Program during project construction to prevent water pollution during construction. The Water Pollution Control Program shall be consistent with the Caltrans *Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual*. Construction Site BMPs detailed in the Water Pollution Control Program shall be implemented during construction.
- WQ-2** Monterey County shall incorporate design pollution prevention BMPs into the project to ensure that the project does not cause off-site erosion and to assure that the project site is permanently stabilized.
- WQ-3** Prior to permit issuance for building, grading, or land clearing, an erosion control plan indicating proposed methods for the control of runoff, erosion, and sediment movement shall be submitted to and approved by the appropriate Monterey County Director.
- WQ-4** Prior to construction, Monterey County shall obtain an Erosivity Waiver from the State Water Resources Control Board by demonstrating that the construction activity would occur only when the Rainfall Erosivity Factor is less than 5 ("R" in the Revised Universal Soil Loss Equation), in compliance with the provisions of the *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit) (Final Order No. 2012-011-DWQ, NPDES No. CAS000003), as amended by Order No. 2010-0014-DWQ.

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